usual materials. Dead willow wood provided only "a slow and punky" fire.

Mortars

The stone mortar and pestle (koi´wus and po´lwai) were obtained through trade with people of the foothills. Mayfield comments that mortars taken by the Choinimni to Tulare Lake were not brought back. Because he saw one dug up at a previous camping site, he believed they all were buried, but more probably many disappeared in trade to the Tachi.[42] The oak mortar (pe´wus), gotten from neighbors in the roblar, was used with a wooden pestle (ma´ta) (M.G.).

Kroeber states:

> The most common form of these among the Tachi was one of white oak. The flat-bottomed wooden block was a little more than a foot high, half as much again in diameter. Except for a narrow rim, the whole upper surface was excavated a few inches, chiefly by fire; but the actual pounding was done in a smaller doubly sunk pit in the center. The pestle was the same as on bedrock. Even the hill Chukchansi knew the wooden mortar, which they called Kowish; and the Choinimni used it.[43]

J.A. insisted that the metate or flat grinding stone (hise´ts) and mano or grinder (lo´wat) were used before Mexican intrusion. Particularly they were used for unshelled seeds, which were rubbed on it, then transferred to the mortar for pulverizing. "All ordinary people had them." Kroeber illustrates a flattish grinding stone from the "Kings River Yokuts" but seemingly there is no textual reference to it.[44]

Bedrock mortars were, of course, unavailable in the valley plains and lake region.

Powers states:

> Around the lake and on Kings River one will often find a family using a well-made stone mortar. They always admit that they did not manufacture these implements, but happened on them in digging or found them on the surface, and that they belonged to a race other than their own. They sometimes have the ingenuity to improve on them by fastening a basket hopper around the top to prevent the acorns from flying out. On the west side of Tulare Lake these mortars are very numerous, and of course they must have been carried thither from the mountains.[45]

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[42] Latta, Uncle Jeff's Story, 31, 37.

[43] Handbook, 527-528, pl. 45.

[44] Ibid., pl. 66.

[45] P.377. "Thither from the mountains" is probably thither from the Coast Range, not the Sierra Nevada.

412 322 The Telamni wooden mortar was described by B.O., a Waksachi informant, during his discussion of trade (see Pt. II). The mortar was made from the crotch of an oak tree which, being of mixed grains at this point, was very hard. It was burned down to a rough size, then burned at the heart and the charcoal scraped and chopped out. This treatment was given inside and out until the desired size was reached. A slender pestle of stone was used with it. [438] These mortars the Telamni sold to the lake-dwellers, Chunut, Tachi, and Wowol, preferring for themselves stone mortars of both large and small sizes which they also bought from the Waksachi or intervening Wukchumni.

Pottery

323 Pottery was not made by the lake tribes.[46] Even a knowledge of it in old times was denied by M.G., while J.A. said she had seen it made by Wukchumni women (M.P. and daughters) but did not remember how. My demonstration of the motor actions of making a "rope" of clay merely elicited a description of firemaking. Red clay [134] was sometimes shaped with the fingers into 757 little dishes (ṭipe´k·l ki´wis). It was chiefly valued as a medicament smeared on the chest. [438] A reliable Wukchumni informant (M.L.) said that pottery was traded to the lake people.

Basketry

285 438 No detailed description of basketmaking techniques was obtained from the Chunut and Tachi informants, but both had important statements concerning forms and materials. This aged Tachi informant (M.G.) repeatedly affirmed that the lake people did not make coiled baskets in old times, that the coiled pieces were obtained by trade. The Wechihit and Choinok had coiled wares, she believed, but the foothill people, Wukchumni, Gawia, and Yaudanchi were the ultimate source for lake trade. In exchange, the handsome tule mats from the lake were prized in the foothills. The Tachi, Wowol, and others dwelling in the tular used a twined technique exclusively on tule and willow materials. There is little remaining evidence of the tule wares, as they are perishable in texture and not attractive as museum pieces.

285 In the collections of the University of California are a few pieces from "Santa Rosa Rancheria, Lemoore" which might have been made by a member of any lake tribe, and a few tule baskets of miscellaneous provenience.

The following basket types were described by M.G. (see figs. 2, 3). An open conical basket (čoto´t), which might be large or small, was made of triangular tules (pumu´k). A seed

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[46] Vide Gayton, Yokuts and Western Mono Pottery-Making.

302 could paint his face any way he liked if he did not want to follow a totemic pattern. After ceremonial washing a man's face was covered with red paint; sometimes a little white paint was put on a woman.

The following information is from Mr. E.W. Gifford, who kindly put his data on Tachi moieties at my disposal.

302 The Tachi employed moiety face paints. The
616 toxelyuwic painted a "pink" stripe of wild rose-
[824] bush powder[48] from the edge of the hair on the forehead down to the tip of the nose, and a horizontal stripe under each eye. A small black spot was added under each horizontal stripe of pink.

The nutuwuts moiety painted the right side of the face solid white, the left solid black. No spots were added.

It seems probable that the informant who gave these data described patterns characteristic of some animal (lineage totem) associated with each moiety. There is no suggestion of specific moiety patterns from any informants of
[613] moiety-divided tribes. The lineage is the essential unit; but if forced to characterize moieties, an informant will choose some important animal (lineage totem) of each, most frequently Coyote and Eagle. Without further detail being given, it would appear that all persons of one moiety or the other had these animals as totems. I believe it is thus with the two paint patterns described to Gifford: that the informant oversimplified.

Money Manufacture

436 The shells for money were obtained whole
321 from the Tokya (Chumash, Salinan, or other
[439] coastal people to the west). By laying them on a rock and giving them a sharp blow with a stone held in the hand, they were broken up into several parts, which were again cracked into smaller pieces by the same method. Each piece was given a circular shape by rubbing down its edge on a large, flat, hard rock. The
[412] discs were then drilled by means of a drill (wa'lai) of bone which was imbedded in the end of a button willow stick. The palm of the left
[237] hand,[49] gummed with fish glue, rolled the drill on the left thigh while the right hand pressed the disc against the rotating tip.

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[48] Concerning the possible derivation of this powder Professor H.L. Gardner, of the University of California, writes me (Gifford): "There is a fungus growing on certain species of roses which causes distortions in the branches of the rose, such distortions being filled with masses of orange colored spores. It is barely possible that these might make a temporary pigment."

[49] Practices with the left and right hands are uncertain with this informant, who is herself left-handed.

[P. 49d] Tulamni

TULAMNI

342 villages the natives live in the winter in very large squares, the families divided from each
361 other, and outside they have very large houses in the form of hemispheres where they keep their seeds and utensils.

412 Utensils.---A metatelike stone mortar, "jars of the same material" (probably steatite vessels), and pattern baskets are mentioned. Skins were used for bedding.

262 Foods.---Pages speaks at length of the animal and vegetable foods available, and, like
136 all early travelers in the region, dwells on their abundance. Of water birds he mentions white, black, and brown geese, ducks, cranes, and white pelicans. He remarks on grouse, "multitudes of quail ... more savory than those of Spain," and many small birds such as
[231] swallows and larks. Eagles measuring "fifteen spans from tip to tip" were seen; eaglets were raised and domesticated but were not eaten. Of land animals, wild sheep, antelope, elk, and deer abounded, and "across the river" [in the Sierra Nevada foothills on the east side of the valley ?] were "buffaloes [sic], bears, wildcats, wolves [sic], coyotes, ferrets and foxes"; in the Santa Lucía range there were panthers [cougar ?].

Of fish there was "an abundance of all species." Seals and otters occurred "as far as one hundred and fifty leagues [sic] upstream in the Rio de San Francisco [San Joaquin River and sloughs]."

262 Several familiar vegetable foods are men-
137 tioned. Three varieties of oak produced acorns, which were prepared by the usual processes of drying, grinding, and leaching. Soaproot, used for washing, was also eaten roasted, as were other tuberous roots and bulbs. Cattail roots were made into flour, and the blossoms into a yellow bread. We can guess that manzanita cider is meant by the "very refreshing drink, somewhat acid" made by soaking the pulp of the fruit of a certain shrub in water. Reeds were dried so that the crystallized juice [sic]

221 166 621 [888] the families in Diapnuša would move within about two weeks of each other. They went in groups: some were related families, others just bound by friendship. Infirm people did not go, being left with food and occasionally visited. The summer encampment lasted until late summer or early fall (wusa´o), the villagers returning in time to prepare for the Annual Mourning Ceremony. Following on that was the season of acorn gathering.

[131] J.B.'s family went with a group of other families to Šiye´du, a seed-gathering camp near the present site of Moffett (no. 39), a distance of about four miles. It was near Yokod [312] territory. The original source of the water there now, unless a spring, was not known to J.B., for even in his childhood an irrigation [342] ditch flowed near by. Referring to their own house there, J.B. said his "father put up the frame while [his] mother made and tied on the grass skirt. No one helped with this; every- [412] body made his own house." Necessary and valuable belongings were taken along. The women of the camp kept mortars buried there as no bedrock was available.

342 592 621 There were six houses at Šiyedu, all of the conical, grass-thatched type, of sound construction so that they were merely repaired from year to year. Two of them later were permanently occupied by two men who worked on a neighboring ranch [Hangton's?]. There was no special arrangement in the location of the dwellings.

The house occupants were:

1. The chief, Muṭoñi (J.B.'s father's sister's husband); Waohot (Muṭoñi's daughter) and her husband Ya´ni (J.B.'s half-brother through marriage [does he mean brother-in-law because it is a cousin's husband ?]). Yani and Waohot later lived there permanently.
2. The winatum, Pokoi (J.B.'s father), his wife Mo´muč (J.B.'s mother), To´pːno (J.B. himself), and Kiwi´ya (J.B.'s half-brother) "when he wasn't working."
3. Ka´osos (J.B.'s mother's sister's son) and his wife Po'o´tso (a Yaudanchi, Čamčusan's daughter). They had no children.
4. Pono´to (Bill Garfield), his wife Huisa´na, and their son Wi´aleče (Sam Garfield). Other children not known to J.B. These people were not related to any of the families mentioned above.
5. Itːmwi´´iyu (a Wukchumni-Patwisha) and his Patwisha wife (name not recalled).
6. Wati´sti (a Bankalachi shaman), his mother Poi´´iːn[342] (also Bankalachi), his Yaudanchi wife (name not recalled), and her son Camu´ma (Charlie, of a Yaudanchi father).

J.B. said that for all there were only these six families at Šiyedu in his youth, in his father's time there were many, many more.

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[342] Consistently pronounced Bo´wiyun by J.B.

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529

[P. 64c] Wukchumni

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a b

Fig. 6. Wukchumni woman at bedrock mortar with seasonal shade. a, pounding acorns. b, sifting off coarse particles. (After photograph.)

252 Deer meat was usually cut into hunks with
262 an obsidian blade and boiled in a clay pot with
[263] salt (tus), according to S.G. But the addition
[412] of salt in cooking was denied as aboriginal by M.L. and M.P., who agreed that in old times salt was only eaten in tiny pinches, usually to accompany vegetable foods, particularly greens. However, all agreed that deer meat was more often roasted than boiled, and that this was done by men.

Ground squirrels and other rodents had the tails broken off, were singed thoroughly on coals, and then were roasted in a hole kept for such purposes close under the fireplace.

Fish were sometimes boiled, but more often were split ventrally and laid on coals which had been pulled from the fire and covered with a layer of sand and grass. In turn, coals were laid atop the fish after they had been protected with another layer of grass and sand.

267 Fish from Lime Kiln Creek, Kaweah River
136 and its several sloughlike branchings, and Wood-
lake were abundant for Wukchumni and Gawia. M.L. described thirteen kinds. The rainbow or "lake" trout (e´p:s); minnows [?] (ta´k:č), a little fish about 5 inches long; suckers (po´dhoi); another tiny fish "which never grew any larger" (ša´dhui); a black fish with a short head, a large dorsal fin, and few bones (tu´kmu); perch, a small flat fish (tapo´psu); a trout "with a swallowtail" (čadu´du); a small fish with lateral fins that "looked like pins" (´khiu); a large oval fish about fifteen inches long, with a large mouth and "one big back bone" (ṭa´ṭu); a similar fish but smaller (ko´po); a fish which resembled a catfish yet lacked whiskers (ni´e´t:č); the "greaser" fish which "has too many bones" (ta´w:s); and the catfish (ča´dut). Eels were not seen in Wukchumni territory nor did salmon reach the Kaweah River, M.L. claimed; she added that few of the old varieties of fish were available now.

252 Deer meat to be jerked was cut in lateral
262 strips from an initial cut down the backbone. The back sinews were first removed as they were the most valued. The meat was rubbed with rock salt which was in strong solution or pulverized. The strips of flesh were hung over tree branches where they were not in too hot sun, and turned daily until dry.

Fish were split ventrally and, unsalted, were hung along a slender pole set up on forked sticks in a river bottom. Fish were hung by their gills only when being carried.

272 Yellowjackets' larvae (ka´wa) were a
[262] favorite accompaniment to manzanita berries.[263] The entrance holes to the yellowjackets' nests were watched at sundown; often three or four were located near each other when the returning

[263] [263] The seeds added as flavoring to manzanita cider were
192 also called ka´wa. Analogical naming, perhaps a form of nicknaming, was a favorite Yokuts trick; in this case we cannot be sure whether seeds or larvae are the original "kawa."

Salt

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Modern "American" salt is called kuyu. In old times two kinds of salt were available. Rock salt (tus) was bought from the Monachi (Eastern Mono), who said it "came from a whole hill of salt that looked like snow." Before it was used this salt was heated on hot coals, which caused it to crumble. The other and more common salt (a´d:t) was derived from marsh grass, and was called in English "red salt" because "it looked red all over the grass."

Once M.L. and her stepmother, who was a Gawia, went over to Haditao for salt. The old women dug up the grass that grew there. She got some wood and made a fire. At sundown she put the grass on the fire which had burned down to coals. M.L. went to sleep but her stepmother stayed up until the grass was reduced to ashes. Then she lay down for a little while. She would not let the little girl look closely at the fire, nor would she herself eat anything. She worked all the next day piling up more grass. At sundown she ate a little bit but would not drink, explaining that if she ate much or drank water there would be nothing in the fire when she finished. When the ashes were brushed away there were lumps of salt in the bottom of the fire. The old woman lifted these out and freed them from the ashes by shaking them in an open-twined basket.

In 1925 M.L. had some grass-salt which she prized. It was greyish pink in color, had the texture of coarse sugar and the taste of mild vinegar.

Kroeber makes a somewhat different statement about grass-salt.[191]

> The Yaudanchi,...with other southern tribes, gathered a salty grass known as alit and beat it on stones to extract the juice; which was particularly favored with green clover.

This was a grass growing in alkaline ground which was abundant in the tular.

Woman's Household Equipment

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A Wukchumni woman's housekeeping equipment comprised one or more digging sticks, a soaproot brush, hot-rock lifters, and a "set" of baskets. The digging stick (ǰa´poi, lit., mountain ash) was made of manzanita, if obtainable, or of young white oak. The length varied according to the owner's preference. The tip was charred and rubbed down on rough stone which gave a heat-hardened point; the point was reworked by the same method when it became too blunt. Sometimes a woman who liked a short stick (about four feet long) would contrive a

[191] Handbook, 530.

412 nobby upper end by capping it with boiled soaproot and tying over this a piece of buckskin. 322 Weights were never added.

The soaproot brush (čəne ʔəl) varied in size from small ones some 4 inches long to large ones of 9 inches.[192] They were used variously for brushing up meal when preparing foodstuffs, or for brushing the hair. Hairbrushes were large and made of coarse fibres which have hook-like tips. One in a family was sufficient. The root to make a brush was dug after the flower had faded when the fibres around the root had reached a maximum toughness. The plant's top was torn off and the fibres carefully removed from around the bulb. The bulb was boiled in water until it became a plastic cream-colored mass. The fibres having been arranged as a brush and so tied, the bulb mass was pressed and shaped over the end as a handle and tied in place with several wrappings of string. The liquid from the bulb was viscous and was applied to burden baskets and cradles, where it dried as a practically colorless stiffener.

The set of rock lifters consisted of a pair of straight sticks and a looped one. The looped lifter, commonly called mushstirrer because one must necessarily stir about in the mush to find the cooking stones, was made of a peeled withelike stick, heated over coals and then bent around the foot to form a loop. The double handle thus formed was tied with a milkweed string or with a thong (see pl. 1, right verticals). Wild grapevine withes were used for a light type of lifter which was peeled, looped, and tied while still green and flexible. Two sticks from Drum Valley are made of bent young oak and, according to the collector's notes, are tied with the inner bark of oak.[193] Although these looped sticks were used to extract cooking stones from food which was being boiled, the hot stones were lifted in with a pair of pine sticks flattened out at one end. As these were often charred they were not allowed to touch the food, and hot rocks to which ashes clung were dipped in water on their way into the food. The best hot-rock lifters were of pine and were bought from the Eastern Mono, who made them for trade. A medium-sized basket (8 to 12 inches in diameter) of simple flaring type was considered a suitable payment in return.

285 The "set" of baskets comprised six types 482 essential for food-gathering, preparation, and cooking. (See figs. 2 and 3.) The large conical burden basket (a ʔaŋ) was of split willow. It was diagonally twined, of close work, and was stiffened with soaproot liquor. Because of

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[192] Those collected by Dr. Barrett and now in the University of California Museum of Anthropology.

[193] University of California, Museum of Anthropology, nos. 1-10846, 1-10848; Dr. S.A. Barrett, collector; cf. Kroeber, Handbook, fig. 30.

321 412 Deer bone awls (poa''uk, M.L.; ap''up, M.P.) were wanted by all women who made baskets and, as there was no tabu on their use for any convenient purpose, others owned them as well. About three sizes were wanted, ranging from 3 to 6 inches.[194] They were made by men from deer fibulae (see pl. 1, floor center).

324 412 An assortment of obsidian blades, also made by and bought from men, was wanted for cutting meat, scraping foodstuffs and basketry materials, and cutting hide.

428 [584] 285 431 Women came by these possessions in a variety of ways. When a boy's family approached a girl's family with betrothal gifts, a burden basket was frequently included as this was an object of value and a type which a young girl could not make for herself. By the time she was betrothed, however, a girl usually had already made herself smaller twined and coiled ware of the seed-beater, winnowing tray, and sieve types. Her mother or aunts (of either side of family) would make her additional baskets, particularly the twined cooking basket.

428 [764] Girls or women inherited from their mothers many of these household utensils; but it was said that "there weren't so many of these" (M.L.) by the time a few things had been put with the corpse and the rest were divided between daughters and claimed by the mother's sisters. Again it was impossible to formulate a rule whereby these objects were gotten or inherited. Women bought utensils and tools from each other and also from men. A woman's husband was expected to supply her with meat and skins. The latter included deerskin for the dress apron and, if the man were a poor hunter and could not procure them himself, he might even buy the deerhoofs used as a decorative fringe on the apron.

Medicines

757 278 The two plants used for poisoning fish (yuoha and tadad) were also used medicinally. The first, for chills or headache, was mashed in a poultice; the second was boiled for use as a steam bath for chills or to soothe the vaginal tract after childbirth.[195] Neither plant was actively poisonous as fish stupefied by them did not need any special treatment before being eaten.

Black paint (ka'di'an) was mixed with grease as a salve. It was applied to sore

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[194] Thirteen awls collected by Dr. Barrett from Michahai, Choiniumi, and Chukchansi territory, now in the University of California, Museum of Anthropology, range in size from 3 inches (1-10839) to 7 inches (1-3997). Three unfinished awls from Drum Valley (probably Chukaimina or Michahai) are 5 3/8, 5 1/2, and 7 3/4 inches (1-10850, 1-10838, 1-10837).

[171] [195] The Miwok used vinegar weed (Trichostema lanceolatum Benth.) as a steam treatment for "uterine trouble" (Barrett and Gifford, 174).

[P. 1029] Wukchumni

844 The place of birth was in the dwelling, according to M.P., but M.L, older and more knowledgeable in aboriginal ways, insisted that [343] delivery took place in a private hut. If the separate hemispherical structure were not erected for her by her husband, she would clear out her storehouse and use it. The baking pit for use after delivery was outside the dwelling, and it may be this, rather than delivery itself, which M.L. had in mind.

At the onset of birth pains the woman got her mother or whichever female relative was to help her. They heated water. Meanwhile the husband was preparing coals, hot stones, and bark to be used in the heated pit, although he did not go near his wife during delivery. No 845 men were ever present, unless a shaman was 755 called in a case of seriously difficult parturition. A shaman gave a drink of pulverized [237] bear's claws to aid the birth. The shaman Haičača had a long bear claw to help women in parturition. He rubbed his hands on it, then on the patient. Then he blew on the woman's back and abdomen. Squatting before her, he placed his hands on her hips and gently shook her twice. "This made the baby come" (M.P.). But often a woman had some method of her own. M.L. had a little supernatural power; Quail was her dream helper. When aiding her daughter in labor, she called on Quail to help. Immediately some quail calls sounded near by, či''up, či''up, či''up: "the baby heard them and came right out."

[787] The maternal grandmother of J.P. dreamed of a roadrunner who told her how to help women in labor. Although she was not a doctor -- "this was just her dream" -- she aided other women with her knowledge.

844 A hollow was made in the floor to one side of the fire pit. It was filled with sand or dry earth and some pieces of old tule mats laid over it. The mother squatted at its edge and pulled on two stakes driven into the ground. (These were not digging sticks.) The assistant stood behind her, pressed her head, her back, her abdomen, always with downward pressing movements. If labor were prolonged, the parturient would get up and walk about between spasms.

As the infant emerged, the assistant caught it off the mats beneath the mother, easing it onto some old deerskins. Pinching the cord about two inches from the infant's [412] body, she cut it with a cane knife and tied the stump with a piece of fine sinew. The cord and afterbirth were taken to the river and fastened to a stake so they could not float away: this prevented the child from ever being sick at its stomach (M.L.). The afterbirth was thrown in the river so the baby would never be sick, according to M.P., who added that often a girl's,

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
[P. 146 a] Choinimni

343 small trinkets stored in baskets. Women kept
251 extra baskets, the burden and fish baskets there, and food which was stored for immanent use.

The acorn storage bin (su'u'na) was made of twined mats of aiač tied around a stout cylindrical framework. The upper ends of the mat wefts were left untwined and, after the bin was filled, these loose tops were bunched up and tied tightly. Acorns were removed from a hand hole near the bottom which was plugged up with willow bark (or any convenient material). The bin was set up on a special platform supported by four posts or in the branches of a tree, to which it was lashed with ho'.[7]

343 Sweat house (mos).---This was the usual
515 two-post structure described for the Central Foothill region. A new one was not built until the old one burned or was beyond repair. The fire was just inside the door; so was the firewood, in two piles, one on each side of the door. Whoever was sitting nearest the wood kept up the fire.

Any male "old enough to stand it" was welcome to make use of the sweat house. There was no ceremonial dancing within it, but doctors or others who knew how would occasionally dance there (perhaps for practice, as we
[533 524] know from the Wukchumni). The flute was often played there, but games were not indulged in.

SUBSISTENCE AND CLOTHING

262 Foods.---Foods available and used were those customary with other foothill Yokuts and were procurable in abundance. Rock salt was
[263] known -- probably traded from the Monachi -- but more often the salty deposit on certain grasses was flicked off on a small willow twig. Greens and bulbs, tule and iris roots were the vegetable foods besides the staple acorn. Buckeye seed was used after a thorough leaching only when acorns were scarce.

252 In discussing the preparation of acorns,
262 Mayfield says that "a sort of sieve or colander, made of fine willow shoots," was used to separate the coarse and fine particles. (This does not necessarily preclude the usual Yokuts circular winnowing tray.) The preparing and cooking of acorn foods are as reported generally for the Yokuts. The soaproot brush with
[412] straight bristles was used for brushing up acorn flour at mortar holes.

Piñon nuts were collected and prepared as by the Waksachi (see below), eaten roasted or mashed in a rich mush.

262 Ground squirrels were smoked from their
224 burrows, but the fan used was a basket or
184 piece of hide, i.e., evidently not a feather fire fan.

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[7] Mayfield describes a similar granary (ibid., 23).

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529
CP. 1539] DUMNA

131 The type of country in which the Northern
175 Foothill Yokuts dwelt was praised by Major Savage. He described it as land of the "Chow-chillas," but in recent times Western Mono have occupied the area and may have then.

131 This belt of country [Sandhill Crane
136 Valley on North Fork of the San Joaquin] beats the region of the Yosemite or the Po-ho-no
175 Meadows for game, if the Indians tell the truth; and with the exception of the Kern River Country, it is the best south of the Tuolumne River. It abounds in grizzly and cinnamon bears, and there are some black bears Deer are very plenty, and a good variety of crane, grouse, quail, pigeons, road-runners, squirrels and rabbits -- besides, in their season, water fowl. This territory of the Chow-chillas has
137 plenty of black acorns (their favorite acorn),
175 and besides this there are plenty of other supplies of bulbous roots.[37]

SHELTER, FOOD, IMPLEMENTS

343 Structures.---There were six different sweat houses (mos) at B.W.'s Dumna village; they were of different ages and sizes, two of them in disrepair.[38] When a new sweat house
[574] was completed, a "fandango" was given by the chief. B.W. could not describe this, save that there was "plenty to eat and everybody had a good time. Then they could sweat."

342 The houses (sa´m:s), large and spherical, were covered with "brush" thatch, not tule.

Foods and beverages.---Pine nuts (pa´san)
222 were obtained on trips up to the mountains or
262 were brought down for trade by the Kechayi. The pine cone and pine tree were called ton; pasan also meant the split pine cone.

Manzanita cider (a´pču) was made of the
252 ripe berries which were mashed and freed of
272 their seeds. The pulp was put in water for several hours, then the liquid was strained through a basket sieve. A hot tealike drink (či´t:l) was made by pouring hot water on the pulp; the pulp, with a little water, was eaten as a "mush" and called ča´pi. A thickening material called ča´n:t was pounded up and added sometimes [čan:t not identified].

Implements.---The plain bow (miko´n) was
411 made of pine, but was gotten by trade from the Kechayi or Posgiss, as was also the sinew-backed bow (piki´l). All kinds [sic] of arrows were called tuyo´s.

412 A knife for scraping was made from the rib bones of a deer or any other large animal.

For fishing, a hook (mike´) was made of
227 "some piece of bone which was boiled to make it soft and then it was bent." This was used on
[262] a string for angling [European introduction ?]. Small fish eaten were: polhu´i, (sucker), wesča´ (lamprey eel), and lu´p:č (brook trout).

[37] Quoted, ibid., 116.

[38] "Too old to be any good, just like I am now," said B.W.

1: Gayton E-5 (1925-1930) 1948 N529 Yokuts N529

227 Large fish, such as salmon, were speared with a two-pronged harpoon. The whole instrument was called piče´kamni, the handle, ti´m:s, the hooks or detachable points, mike´, and the strings, hilu´s. Speared fish were: e´p:s [242] (lake trout), poi´yem (whale [sic], pike?), and gai´h:t (salmon).

482 The carrying basket (a´naš) was "used by every woman"; it was carried by means of a tumpline (wi·če·´n).

The carrying net (wa´lak) was made and used by men only.

252 Women pounded acorns (pai´y:n) at bedrock mortars (tin:l), using a large pestle (če'; ●412 pa´lui, Gashowu). Acorn mush was called ki´n:m (ti´p:n, Gashowu).

MISCELLANEOUS DATA

276 Tobacco.---Tobacco (pa´'om) grew plentifully in Dumna and adjacent foothill territory, according to B.W. About April it would be well grown and turning yellow; then old people, men or women, went out to pick it. They pulverized the dried leaves, added water, and formed the paste into a biscuitlike pat called šo´gan. When dried this tobacco was smoked (pa´mon, to smoke) in little pipes (su´ktao, pipe of elderwood [su´kut]; si´k:lao, pipe of cane [sik:l]). B.W. has seen stone pipes, but never any of clay.

[787] At night before going to bed, men or women who wanted good health or were seeking supernatural dreams would cause vomiting by eating tobacco and lime. The cake tobacco was pounded up in a special small mortar (koi´w:š) with burned shells (ok), water added, and the mixture eaten or drunk in very small quantity.

Blankets and clothing.---The rabbitskin 281 blanket (xeu´či; cex:´na, Gashowu), made of the skins cut in strips and rolled, was made by women. B.W. could give no intelligible description of its manufacture. (Mexican or American blanket was called subo´n.) Women also "made clothes of deerskin."

Ferrying.---Everyone was a good swimmer, 481 but children, sick persons, and goods some- 501 times had to be taken across the San Joaquin 285 River, which is swift and deep. For this pur- 484 pose there were large flat-bottomed baskets called te´w:č (taskai´, Gashowu). These were tightly coiled, but were not waterproofed. Infants and goods were placed in these and pushed ahead with one hand by one or two swimmers. A [758] sick person would be laid on a raft of two or three logs; these too were used for goods, but baskets were preferred. Rafts also were pushed by swimmers; the river was too deep for poling.[39]

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[39] The Mayfield family were assisted across the San Joaquin River by a group of friendly bathers who, if not Dumna, at least were their close neighbors (Latta, op. cit., 11-12).

592 There were three to five persons in a house, J.R. continued, depending entirely on the number and condition of the family members. An average home consisted of a man and wife and their children. If there was an adult dependent, such as a sister or older relative, they would provide a separate little house for her close by. A widow and her children, or a widower and his, might also comprise a discrete household.

221 M. lived here at Picayune in a native-type house when she was a little girl. People moved around as the seed crops needed harvesting. They left their houses, light as they were, at home and made temporary shelters whenever necessary for camping. There were bedrock [412] mortars wherever they went, all around; most of these are filled in through disuse, now.

When a family permanently left a house, [166] for no objectionable reason, another family might move into it. People moved by families; whole villages did not move en masse.

Warfare

721 It was J.R.'s opinion that there was 648 little intertribal warfare in the Fresno River region.

The Indians did not fight each other unless drunk. The only way they killed other Indians was if a witch doctor killed lots of people: then they would kill this doctor.

A big bunch of Chukchansi wouldn't go out and fight a bunch of Mono. Maybe they would kill one man at Northfork [Western Mono locality]. This man maybe had not done right by some [726] Indians there. Maybe some Indian from Coarse Gold [Chukchansi] wouldn't like him. They would lie in wait for him along his way and shoot him from ambush. That is the only way they killed one another up here. A Chukchansi would kill another Chukchansi this same way.

[847] J.R. thought that an abnormal infant, a 727 monster, might be killed, but he regarded this as hearsay. A person who was mortally wounded was not put out of his agony: his relatives took care of him as best they could until he died.

726 An account of an engagement and the ensuing negotiations between Indians of Fresno River and the encroaching whites refers to the same encounter described by the Dumna, Bill Wilson, that of the Mariposa Battalion in 1851. At the time, J.R. was a baby in his basket; later his mother told him about it.[a]

The last fight was down here about ten miles, on the Fresno River. It was a long way up from Raymond. The Indians from all around

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[a] J.R. probably had not yet been born.

291 used a little sharp stick run through the overlapped front corners "just like a pin."

All informants said moccasins were little used; most people went barefoot (as do most children today). Moccasins were used only when walking a long distance. These were in two parts, a sole and upper, and were decorated with beads or bones which were tied on. Possibly a sandal type was known, for F.M.'s interpreter, said "Some who knew real how would make them like yours [Oxfords, i.e., a moccasin with solid upper], and some would just put straps like."

293 For dress occasions or dancing, eagle, bluejay, and woodpecker feathers were arranged around the head and neck, said J.R.

Tattooing was indulged in by Chukchansi
304 women, who so adorned the breast, abdomen, arms and legs, according to Kroeber.[85] [Inferentially, the chin was tattooed as usual.--A.H.G.]

Foods

252 Acorns.---Two accounts of the treatment of acorns were given, the first by Jack Roan with Polly Roan interpreting, the second by Nancy Wyatt, Marian and Lillian interpreting.

Acorns were picked when green; put on rocks to dry in the sun for about one week. Some were stored in sacks in the house, others in a granary covered with pine needles. At Picayune there were mostly white oak and water oak.

Black oak acorns were picked from the trees while green. Green acorns can be peeled, whereas ripe ones must be cracked. At the
[481] proper time about September, men climbed the trees and cut off the limbs.[86] Acorns fell off easily, were picked from the ground and put in commercial sacks. A barley sack holds nearly two hundred pounds. Before they had white peoples' sacks they used baskets. If a woman had no man to climb trees for her, she would do so herself. Picking acorns was an all-day job for many days, a month perhaps.

[512] Toward sundown the people went home and had their evening meal. Immediately after, the acorns were brought in and everyone in the family sat around peeling them. They would finish all they had got that day, which might yield two basketfuls. Next morning, before setting out, the women spread out the peeled acorns to dry on rocks. This procedure continued for a week or ten days; by that time the acorns on the trees were growing too ripe for peeling. Hence they were taken directly to
251 the drying rocks. When all were dried they
252 were stored, the peeled ones in sacks in the

[85] Ibid.

[412] [86] Undoubtedly a misunderstanding: they had no wood-cutting tools. -- A.H.G.

[P. 189 9] Chuckchansi

283 Cordage and nets.---Milkweed plants were gathered when dry and the bark on the stem stripped off, said J.R. This is easily accomplished when the plants are dessicated. To spin this into string, two strands of the inner fibre were held between the thumb and forefinger of the left hand, while the loose ends were held on the left (sic) thigh under the palm of the right hand. As the right hand rolled the fibres forward, the left or gripping fingers twisted it along [in which direction?].

This string "never breaks"; long strings were made by tying short ones together.

286 The carrying net was made of milkweed twine. J.R. described it as "with strings at the four corners, by which it could be gathered together, to carry on the back by means of a tumpline." The net was made "by tying two strings to two sticks equal distances apart (to make a fabric 18 in. to 2 ft. wide) and tying other strings to these first two about 2 inches apart." (The recorder doubted that J.R. had seen a net made in many years.) [J.R. may have been describing the fine mesh bag of Miwok type, which may have been used by the Chukchansi rather than the coarser Yokuts type of carrying net.[107]]

283 According to N.W. a string called s'atip was made of the bark of "trees with yellow flowers, just like those apple trees, I think they are, straight, tall, with bunchy branches like almond trees." The flowers grow up the stem "just like hollyhocks, that size, but yellow." The bark was taken in two-inch strips off straight trees selected for the purpose. -- [Fremontia? -- A.H.G.]

283 286 Woven sacks were made in which pine nuts were stored, said N.W. These were made of milkweed string cloth, woven by the same technique "as the string that holds the baby in the cradle," and sewed up the sides. No dimensions were given; a big wide piece was woven (sic).[108]

281 Rabbitskin blankets.---Rabbitskins were torn into strips and woven into blankets almost as large as modern bed blankets. The feet and tails were fastened around the edge, said N.W. No informant could describe their manufacture. Such blankets were expensive and owners did not want to sell them. In sleeping, one lay under them, did not roll up. Not many rabbits were [134] available at Coarse Gold; most were obtained in the foothills at the valley's edge, said J.R.

● 412 Woman's equipment.---The digging stick (č'opu[1]) was 3 to 6 feet long and 1 to 2 inches

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[171] [107] Barrett and Gifford state that a netted bag was used by the Central Miwok, and imply that a carrying net for large burdens was not employed (Miwok Material Culture, 247, 196).

[171] [108] The technique for making tumplines was not described. Presumably it was like that of the Wukchumni (see fig. 13, Pt. I) particularly as the Miwok method is identical (ibid., pl. LXXVI). It would be possible to make a cloth in this manner, but further evidence is needed before N.W.'s statement can be credited. -- A.H.G.

[P. 189 b] Chuckchansi

412 in diameter, said N.W. (3 to 4 ft., 1 in., said J.R.). The wood, yellow and hard, was from a long straight limb of a tree growing [824] more abundantly at North Fork than at Coarse Gold. (It was mountain mahogany, grew around Coarse Gold but not at higher altitudes, said J.R.) The limbs were straight, grew close to the ground. The point seldom became dull. The stick was operated with a paddling motion, the digger bending over; "sometimes one stood up but that was too tiring" (N.W.). All types of digging were accomplished with this instrument: for all root materials, postholes, graves.

[824 222] Long poles for shaking down acorns were made of "peppermint wood." They were crooked at the end by heating and bending while pliable, said N.W.

412 322 Soaproot brushes were used for all brush requirements: hair brushes, sweeping up acorn meal at mortar holes, washing and scrubbing baskets, sweeping the house floor, etc. They were made in several sizes, from one foot wide down to little ones of one or two inches. About midsummer, July, women went out with digging sticks and obtained sackfuls of the soaproot plants. These were made up into brushes at once as they do not need to be dried. First the fibrous exterior was removed; then the bulbous interior was put on a bed of coals, buried, and left to roast at least half a day. When removed, the bulb is "like potatoes"; the skin will rub off. Actually the bulb is layered, onionlike, and the inside of each layer contains a soapy substance. Layer by layer the material was scraped off with the teeth (today a knife is used) and chewed. It turned white; it was then deposited in a basket to be used later as the platic handle of the brush.

The fibrous exterior was then taken. The bottom, coarser ends, which served as bristles, were pinched together firmly and bound between two sticks.[109] The upper end, which became the interior of the handle, was twisted tight, squeezed, and bound up. Two or three layers of root fibre were needed for an average-sized brush. All were bound firmly together, through and through. The binding cord was not specified; presumably it was milkweed string. Finally, the handle was wrapped round and round. Then the soapy plastic was smeared on; its gluey quality allowed it to be perfectly smoothed. The two sticks on the bristle end were still in place and by these the brush was hung up to dry, either in the sun or in the house. One week was needed for the complete hardening process.

Sometimes brushes were made from fibres or uncooked roots which were used for washing purposes; they have light-colored bristles. The bristles are said to turn dark in cooking. [But, above, they were also said to have been removed before cooking; an irreconcilable state-

[109] Barrett and Gifford illustrate soaproot brushes at this and other stages of manufacture (ibid., pl. XXXVI).

412 322 ment. -- A.H.G.] The plastic material for the handle was taken from another uncooked root.

515 Soaproot was used to wash the hair, head, baskets, etc., said J.R. (Since skin clothing hardened when wet, it was not washed.) The root, when pounded, exuded a soapy juice which was then mixed with water as a washing fluid which lathered. The fibres were saved for brushes. J.R. added that, when the bulb was [262 252 171] roasted, it was "just like roasting potatoes." [The inference is that some varieties of soaproot were pit-cooked and eaten as by other Yokuts, Miwok, Pomo, etc. -- A.H.G.]

415 322 Mushstirrers were made of green chaparral [Ceanothus?], heated and bent into shape, tied with milkweed string at the neck of the loop and at the ends of the handle. Total length, as seen by Thrall, a bit over two feet. A pair of straight sticks some four feet long were used like tongs on hot cooking stones.

415 322 Cooking stones were made of soapstone, said N.W.; she called these pako'yun or halix. They were heated and dropped in acorn mush to cook it. Plain stones broke when so used and "spoiled the food."

Soapstone dishes (approximately 6 in. in diameter, 2 in. deep, with walls 1 in. thick) were made by the Chukchansi. They were used [412 322] for cooking larvae and worms.[110]

Wooden mortars were known to the Chukchansi, says Kroeber.[111]

323 The absence of pottery agrees with previous findings of Kroeber and Gayton.[112]

411 Weapons.--Plain and sinew-backed bows were made by Chukchansi (and Miwok). The sinew-backed bow was of cedar, about three feet long. Deer sinew from each side of the backbone, about 18 inches long, was glued on the back of [237] the bow. The sinews had been kept dried for this purpose. Once on the bow, it was never permitted to get wet. The bowstring was always sinew. Nevertheless, the bow was kept outside the house, according to J.R., but always unstrung when not in use. This type of bow was for hunting large game -- deer, bear, cougar, coyote, wildcat -- and for warfare.

A plain bow of mountain willow, four feet long and strung with a milkweed string, was used for everyday shooting of squirrels, gophers, rabbits, and birds. The informant J.R. maintained that the same type of arrow was used with either bow. [Doubtless the same arrow could be used, but it is unlikely that only one arrow type was used. Moreover, the flat bird arrow is mentioned in a Chukchansi myth. -- A.H.G.]

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[110] Cf. Kroeber, Handbook, 527.

[111] Ibid., 528.

[112] Ibid., 537; Gayton, Yokuts and Western Mono Pottery-Making.

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
[P. 294] western Mono NS25

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Explanation of Plate 2

Yokuts and Western Mono Specimens, Göteborg Museum

a, Wobonuch winnowing tray, burden basket; b, Wobonuch rock-lifter, mushbasket, cradle; c, Wobonuch fish basket, sieve, individual eating basket; d, Wobonuch pestle for bedrock mortar, handstone, arrow straightener; Wukchumni tobacco mortar and pestle; e, Waksachi fire fan, Wobonuch soaproot brush and "treasure" basket; f, Wukchumni gambling tray, dice, counters.

1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
[P. 295] Western Mono NS25

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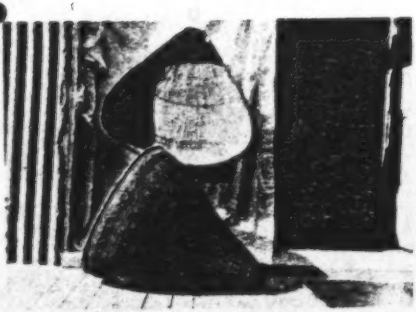

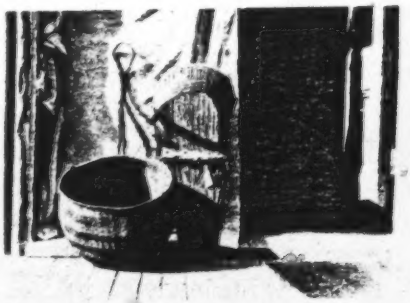

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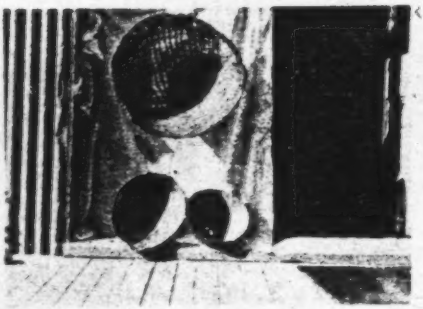

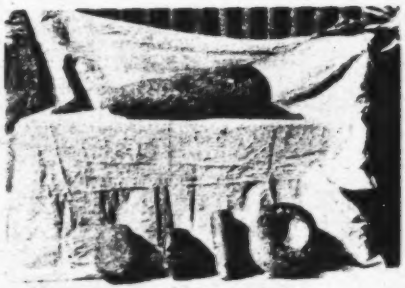

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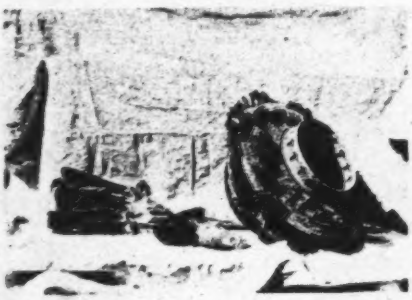

PLATE II. YOKUTS AND WESTERN MONO SPECIMENS, GÖTEBORG MUSEUM

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

HOUSES.

The Yokuts built at least five kinds of dwellings. 342

1. Most distinctive was the mat-covered, gabled, communal *kaui* of the Tulamni, Hometwoli, Wowol, Chunut, and perhaps Tachi. The roof pitch was steep. Probably each family constructed its own portion, with door to front and back, closed at night with tule mats. Each household had its own space and fireplace, but there were no partitions, and one could look through from end to end. [362] [592]

[304 531]

FIG. 46.—Women's and men's tattoo. Women: a–e, Chukchansi Yokuts; f–s, Mohave. Men: t–z, Mohave.

These houses sometimes ran to a size where they accommodated a little more than 10 families. A shade porch extended along the front. The tule stalks were sewn together with an eyed bone needle and string of tule fiber. [412]

2. The Yauelmani and their neighbors of the southern plains off the lake approached this long structure in aligning their wedge-shaped tule houses or *dumlus*, but kept each contiguous family domicile separate.

3. The middle plains tribes, such as the Wechihit and Tachi, to-day build small tule houses of another type, elliptical or oblong

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29
Miwok NS16

M
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412

MIWOK MORTAR HOLES IN BEDROCK AND BOWLDER PESTLES

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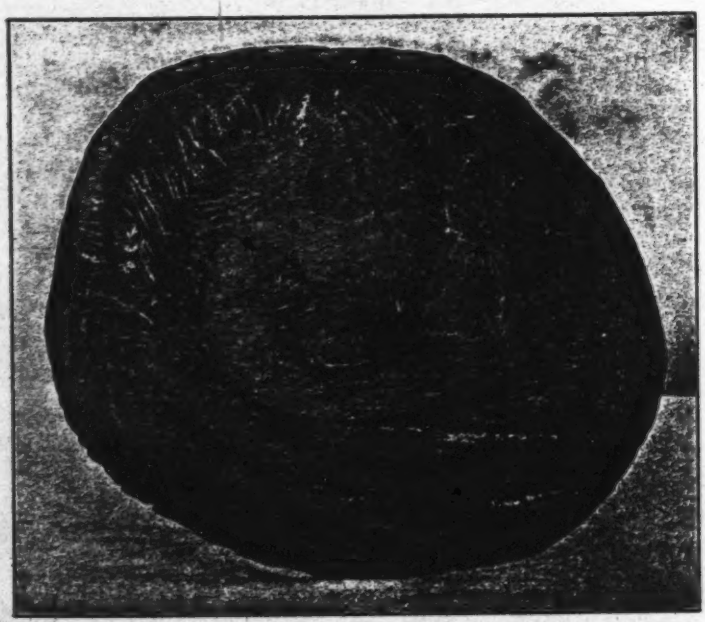

VALLEY YOKUTS MORTAR OF OAK

[Facing p. 524]

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

YOKUTS PLANT FOODS AND THEIR PREPARATION.

252 262 The buckeye process, which was probably similar to usages elsewhere in the State, was the following: The nuts were broken with a stone and soaked in water for a day. Next, the kernels were crushed to powder with the pestle. The last step was the extraction of the poison, which was done in the acorn-leaching place by the creek. Each time the flour dried a stick was laid aside; the pourings were so timed that the tenth stick was taken as the sun was nearly setting. The woman then cooked the flourlike acorn mush, and it was usually consumed on the spot.

The digger pine nut was not only eaten whole and raw but often treated like small seeds, being winnowed in a scoop-shaped basket, [251 343] pounded into flour, and cooked.

Acorn granaries were of Miwok and Maidu type. There is no record of their occurrence south of the Yokuts.

[415 324] Small shallow cook pots of soft stone, perhaps steatite, though described as reddish, were used by the Chukchansi and no doubt irregularly by other tribes who had access to a suitable supply of material. They were dug out with quartz. *Kuyati* and *kulosun* grubs, and angleworms, were perhaps stewed in these vessels, or more likely fried in their own fat at the edge of the fire.

[415 177] The paddle for stirring boiling acorn mush is not a Yokuts implement, the central Miwok being the most southerly group among whom it makes its regular appearance until southern California is reached. The Yokuts substitute a stick looped on itself, a less efficient stirrer but more serviceable for removing the cooking stones, and far more readily made. (Fig. 38.)

THE MORTAR.

412 The mortar was a pit in an outcrop of granite, used until the depth of the hole became inconvenient. A convenient exposure of bedrock near a village often contains dozens of holes in all stages of wear within a few yards. (Pl. 45.) Poles leaned together with brush thrown on made an arbor under which a group of women would work for hours, gossiping or singing. Their pestles were often left on the spot; they are rude, irregular, with little taper, and somewhat oval in cross section, even with one or two sides flat or concave; in fact, little more than longish river bowlders, somewhat shaped, partly by pecking with the edge of a flat cobble, and in part by continued usage.

On the alluvial plains portable mortars were necessary. The most common form of these among the Tachi was one of white oak. The flat-bottomed wooden block was little more than a foot high, half

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

as much again in diameter. Except for a narrow rim, the whole upper surface was excavated a few inches, chiefly by fire; but the actual pounding was done in a smaller doubly sunk pit in the center. The pestle was the same as on bedrock. Even the hill Chukchansi knew the wooden mortar, which they called *kowish;* and the Choinimni used it. It is a type that has rarely been observed north of Tehachapi outside the San Joaquin Valley: there are attributions to the Konomihu and the Patwin. (Pl. 45.)

Loose mortars of stone were found and used on occasion by all the tribes, but the universal testimony is that they were not made. In fact, the Chukchansi declare their inability to do so, and attribute all stone mortar holes, in situ as well as portable, to the coyote, who employed an agency of manufacture that decency debars from mention.

It is reported that the Yokuts sometimes fastened a hopper of basketry to the edge of a stone mortar; but this practice is established only for the southern California tribes, and needs confirmation. There is no Yokuts mortar basket, and the few available specimens of the combination suggest that an American may have cut the bottom out of a cooking basket and asphalted it to the stone.

Small stone mortars were probably used for special purposes quite different from those usually assumed. A toothless woman, for instance, was likely to keep such a one for pounding up the whole gophers or ground squirrels that younger relatives might from time to time toss her. Others may have been used for tobacco or medicines.

THE TAKING OF GAME AND FISH.

One hears less of deer snaring among the Yokuts than in the north; but they knew the device. Only, instead of setting the loop in a runway so as to encircle the neck, they laid it in a small concealed pit and fastened the end to a log.

Deer stalking with a deer's head as a decoy was shared with all the tribes of the north and central parts of the State. The Yokuts add that they painted their arms and breasts white like a deer's underside, and aided their traveling on all fours by holding a stick in each hand. When an animal was approached from the leeward, these sticks were rubbed together to produce the sound of a buck scraping his antlers.

Elk were too large to be snared, and in the open plains impossible to approach within bow range. They were chiefly secured in long-distance surrounds and drives called *taduwush.*

Antelope were similarly hunted, the valley groups uniting for intertribal drives, in circles that must often have been many miles in diameter at the start. When the ring had narrowed down so

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Yowlumne

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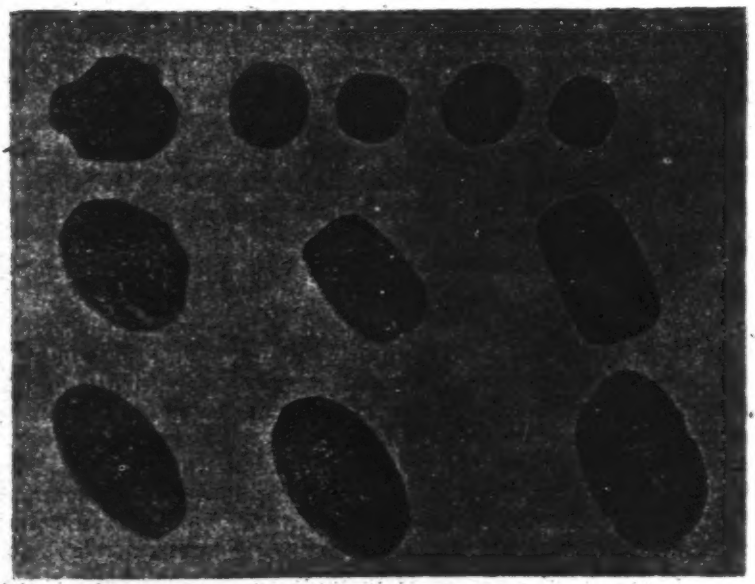
[412]



Yokuts arrow straighteners and the tools with which they were made. These were all unearthed for the author by Ichow, an aged Wukchumne. He had seen his grandfather bury them about 1865, "During the white man's big war," said Ichow.
At the top left is a sharp fragment of hard blue stone used to peck the articles to shape and to the right are four more which through use have been reduced to hammer stones. At the left, center row, is a stone which shows hammer-stone marks and which was discarded because it contained a flaw. To the right is another which broke while being made. The other four show varieties of construction. The completed arrow straightener was heated in the fire and used to harden and straighten the cane arrow shafts. Buttonwillow and gooseberry shafts were most often dried and hardened over an open fire.

down a hole and the barb prevented the foreshaft from slipping from the wound.

A most ingenious device was used on ordinary waterproofed stone-pointed foreshafts for shooting ducks when they were resting on water. An ordinary arrow dives or is stopped almost as soon as it touches the water. To prevent this the Yokuts slipped a small roll of tules on the foreshaft. This lodged against the ferrule on the end of the main shaft. When the arrow struck the water the roll of tules prevented its diving and allowed it to skip forward on top of the water. It was the original skip-bomb weapon.

411
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3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

436 as more thousands in all stages of completion. A study of these
324 proved that the steatite was first split into thin slabs, gouged, scraped, and sanded smooth, then cut into strips by means of a chipped stone saw. I found two of these saws, their chipped
● [412] edges still coated with steatite. The strips were next cut into squares. Cuts were made from opposite sides until the strip was severed. Then holes were drilled in the square blanks.

Ichow, last chief of the Wukchumne, explained to me the whole process of making steatite beads, not knowing at the time that I had already found proof of almost every statement he was making. Said Ichow, "When I was a boy I saw an old Wukchumne man make lots beads. He drive stake in ground. He sit on ground straddle that stake. He cut little square hole in top that stake. He put square bead in that hole. Then he take little stick with *kots* (obsidian) drill point on end. He spin that drill between his hands and make holes in them square beads."

Ichow went on to explain that the square beads were strung on a small, hardened rod of chamise wood and rolled between the hand and a gritty, flat piece of sandstone. This ground the corners from the square beads and left them of uniform size. This steatite bead was the most common form of Wukchumne money. Said Ichow, "Most our money was them soapstone beads. Them *Telumne, Kaweah, Koyeti,* and *Choinok* used the same beads almost all time. Them *Chunut, Tachi,* and *Wowol* people used more shell money, but they used some our soapstone money, too."

The most interesting feature of this steatite Yokuts money is that the edges of it were milled, almost exactly as are the edges of our silver dollar. The principal difference in the milling was that the Yokuts bead-money was milled at an angle with the flat sides. This milling is surprisingly uniform and will be found on this form of Yokuts money at old village sites from Paleta and Tejon Canyon on the south, to Coalinga and Friant on the north.

436 Spangles and ornaments of various forms and sizes were
301 made from abalone shell. I have several statements establishing the fact that they passed from person to person as money; but because of their supernatural power, they were valued so highly that such use was greatly restricted. They were known as *Tahp* and were used on *Tripne* (supernatural) ceremonial costumes. They were also placed over the eyes, ears, and/or

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

436 From the Pismo clam were also produced nicely smoothed
321 and rounded curved objects with pointed ends. These were drilled from the pointed ends, the opposing holes meeting at the middle. I have never seen one of these objects taken any place in Yokuts territory, except from the mouth cavity of a buried skeleton.

Slender, straight-sided tubes were also made from Pismo clam-shell. They varied from three-eighths of an inch in diameter and three inches long, down to one-fourth of an inch in diameter and less than one inch long. Some were not cylindrical, being larger at the middle than at the ends. The Wukchumne Yokuts called these *Cutscotch* (Coots'-cotch).

The most valued of all clamshell money were long, curved tubes. These varied with the size of the shell, the largest being more than six inches in length. They were slightly wider than they were thick and were perforated lengthwise. This perforation is the most remarkable feature of all Yokuts manufactures.

The shell of the Pismo clam is as hard as the glaze on a piece of china. To drill two opposing holes, each three inches deep, through such material, having them meet in the middle, is a feat worthy of modern tools in the hands of a practiced mechanic. Mayfield, who was a white man raised by the *Choinimni*
[439] Yokuts, stated to me that an old artisan of that tribe obtained in trade slender objects which he (Mayfield) believed were "walrus, or sea lion whiskers." The large ends of these were pounded between two rocks, forming a sort of short-bristled brush. A shallow hole was drilled with a stone-pointed drill as a starter. Fine, sharp sand was placed in this hole. Then the brush-pointed "whisker" was placed on top of the sand and spun between the palms of the hands. Mayfield had not seen the Pismo clam money drilled in this manner, but had seen other hard objects so drilled. From Ichow I learned that an identical process was used by the Wukchumne and Yokodo. The only variance was that no "whisker" of any sort was used. The drill was made from the slender chamise-root splint used in reducing
[412] the square steatite beads to a round form. Said Ichow, "That old fellow take piece of green chamise root and scrape it just about this size [illustrating with a piece of ordinary bailing wire which he picked up beside his chair and which he continued to hold in his hand as he talked]. Then he hold this piece root over fire and scrape and dry him good and straight and hard like

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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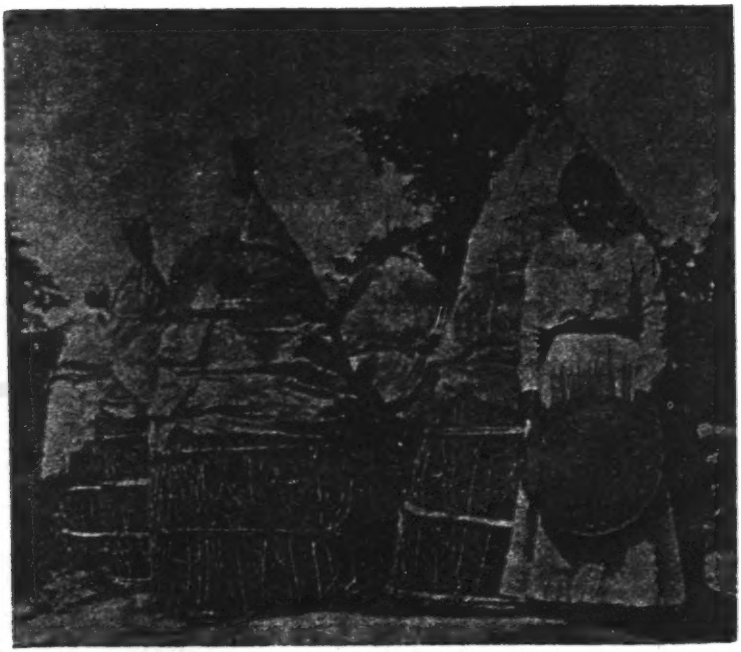

Acorn granaries and a Chukaimina Indian woman in Squaw Valley about 1890. Note that her hair is bobbed in mourning. The Yokuts Indians were dying in such great numbers during the 1880's and '90's that few photos taken during that period show a woman without bobbed hair. Photo furnished by Jesse G. Pattee.

THE PREPARATION OF ACORNS

252 When she decided to prepare acorns, (*Putus,* poo'-tus), the *moke* (mo'-ke) took a flat bottomed basket (*kot'-chow*) of about half-bushel capacity, placed it under the granary, and pushed apart the grass and branches, allowing the acorns to slide from the granary into it. When the basket was full, the branches and grass were replaced, sealing the granary as it was before.

252, 412 The acorns were taken to a cool, shady place and there were hulled. The hulling was done by means of a rock. This rock was generally a nicely shaped stone of a size to be easily grasped in the hand and known to collectors as a mano (Spanish word for hand stone), but called *ko'-dis,* or *wik'-sid,* by the In-

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

dians. This same stone was used as a rubbing stone and was generally flat on opposite sides. The ends were kept rough by pounding them with a jagged rock. This was done so that the mano would not slip off of the acorn while it was being hulled.

A second rock was often used in the hulling, it being embedded in the soil in front of the worker and having drilled in it one or more shallow holes. The acorn was placed upright with the point in this hole and the large end struck with the rough end of the mano. A slight tap was sufficient to break the hull loose, and it fell away from the acorn. The hulled acorns were placed in a basket, the process being carried on until several gallons of hulled acorns had been obtained.

The sweet valley acorn had a very thin hull, which often split while drying. It was not necessary to crack them with a mano. The cracked hulls were pulled off with the fingers. The other hulls were removed with the teeth. As these acorns were badly eaten by moth larva, they were smoked after being hulled. Holes were drilled in them. They were then strung on hemp strings like beads and hung from the inner framework of of the house where the smoke from the fire prevented the moths from depositing their eggs. The acorns were next taken to a mortar. These mortars, along the streams, often existed in the large earth-bound rocks, and remain today as almost the sole evidence of many Indian village sites.

Away from earth-bound rocks, portable stone mortars were used. Some of these were excavated in very rough boulders. Others were nicely shaped inside and out. A few were so finely shaped and polished as to appear to have been made on a potter's wheel. In primeval days many wooden mortars were used. Pioneer white San Joaquin Valley settlers tell us that when they arrived in Yokuts territory the trunks and large limbs of fallen oak trees were cut full of holes where the Indians pounded acorns. A double handful of acorns was thrown in the mortars, which the Indians called *puh'-wus. Pahd'-uh-we,* the pestle, a slender stone, was grasped between the hands and the end brought down on top of the acorns. Repeated blows pulverized the greater portion of the acorns, which, by reason of curing in the granary, were dry and brittle.

Sifting of the pounded acorns was done with a flat tray called *ki-o'-to.* The powdered material was brushed from the mortar onto the tray by means of *tro'-kote,* a brush made of

[text continues on p. 111]

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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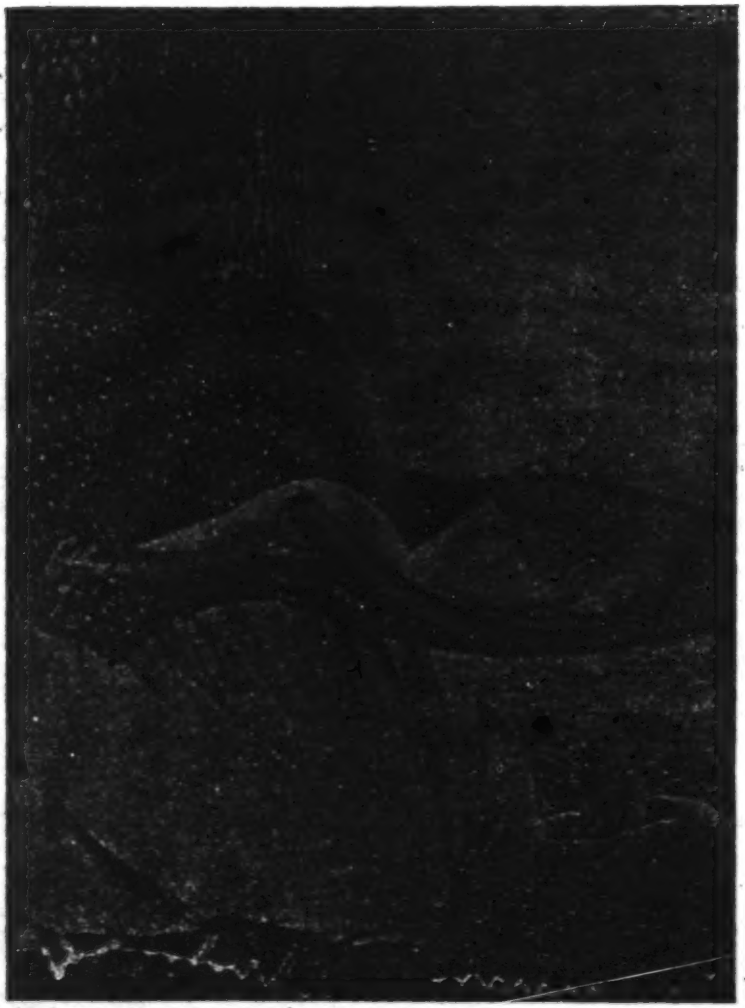

A Chukaimina woman preparing to pound acorns. Photo taken about 1900 by Mrs. A. D. Overholtzer, of Squaw Valley Corners.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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Leached acorn flour and equipment for handling acorns. Foreground: Cakes of leached acorn flour, resting in a sand basin, lined with grapevine leaves.

Center, left to right: First: A grass brush over which the hot leaching water is poured. It prevents the flour being washed away when the water is poured.

Second: A soaproot husk brush used in brushing flour from mortars and for many purposes about an Indian camp.

Third: A looped acorn mush stirrer. It is made of a green oak limb and is used for stirring the cooking mush and for removing the cooking rocks from the mush and replacing them in the fire.

Fourth: An acorn flour sifting tray with a cake of leached acorn flour on it.

Rear: Cooking baskets; at the left is shown a lightning pattern, at the right the gopher snake pattern in a milkweed fiber carrying net.

each leaching. Count of the leachings was sometimes kept by laying aside a short stick each time. Leaching was quite successful in removing the bitterness, even from the most bitter mountain acorns.

The leaching being done, the material was covered with a piece of deer skin (*hoey'-in chud'-way*) and left to harden. After it had dried, the cake, or loaf, was lifted from its bed, the leaves removed from the bottom of it, and it was taken to the house.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

BLACKBERRY JAM

262 137 222 Many persons, including those who have lived near San Joaquin Valley Indians, appear skeptical when told that blackberry jam was a common dish among those peoples. Wild blackberry vines covered the river bottoms in patches several acres in extent and climbed many yards above the ground. I have been informed by Kaweah River pioneers that single primeval blackberry thickets covered as much as five acres and climbed about through the willows so that a mounted man could ride under them. They were favorite hiding places for grizzly [231] bears, so I have been told by aged Yokuts Indian women, and it was customary to take dogs into a thicket when beginning to pick berries. Said *Ah-kah-dih'-nim,* an aged *Wukchumne* Yokuts, "The dogs chewed the bear's hind legs while we ran to camp."

262 222 The berries are ripe during the month of June. Along the Kaweah, shortly after it leaves the foothills, and at one or two other places where the vines have not been killed by burning, they are still loaded with ripe berries at that time.

The wild blackberry is not unlike the tame one. It is smaller and a little sharper in taste. But when they are completely ripened the berries are as sweet as tame berries and of much better flavor. This wild blackberry was an important staple among the Yokuts Indians, who called it *mah-mid.*

262 222 415 Descriptions of the gathering and curing of these berries still form one of the most interesting accounts of Yokuts food preparation. Two utensils, or containers, are utilized in gathering berries. The first container is an acorn shaped basket about six inches in diameter and ten or twelve inches in depth. It is rounded at the bottom and fitted with a deer-skin handle much like the bail of a bucket. The Indians call this basket [482] *chaw'-much.* It is suspended from the neck, and is one of the most convenient utensils used by the Indians, as it leaves both hands free for gathering berries.

262 222 In addition to the chawmuch, a hooked stick is used in pulling the blackberry vines within the reach of the worker, and in forcing them apart so that berries underneath may be reached. [412] The chawmuch having been filled, it is emptied into a shallow wicker basket, or colander, called *tah'-meuk.*

After the tahmeuk is filled it is emptied into the burden basket which is then carried to the rancheria in much the same

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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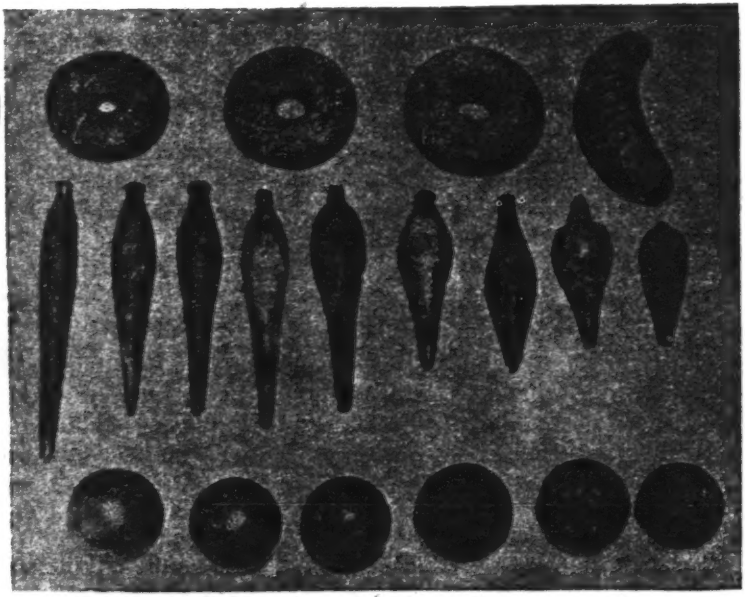

Top left are three perforated stones used in ceremonials and as game stones. At right is a crescent shaped stone, reported as having been used in a girls' adolescence ceremony. Center are charm stones. The one at the extreme right was found near Mountain View, Santa Clara County. The eight stones at the left were found in a "nest" at the Harris mound, six miles west of Tulare. Bottom row shows six stone footballs, found buried together under an oak tree on Kings River Island near Laton.

diameter and had a hole in the center about an inch in diameter.

"This game was played principally by the young men. It was a much quieter game than the disc game, but was scored in the same way. They shot wooden pointed arrows at the stone as it passed by.

● [412] "This same stone was used to straighten their arrows and their shafts for gigging fish."

MISCELLANEOUS GAMES

361 526 In addition to the statement made by Mayfield concerning the Indian game courts, we are assured by other pioneers who lived near the Indians during the early settlement of the San Joaquin Valley, as well as by old Indians themselves, that

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

CHAPTER VIII

HUNTING AND FISHING

THE MANUFACTURE OF CHIPPED POINTS

There are many traditions about the North American Indians which persist with surprising uniformity and which are also quite characteristic of that noble race. There are on the other hand certain traditions which are even more persistent and which are certainly not generally true, and some possibly with no foundation in fact. Probably the most dogged of these last traditions concerns the manufacture of arrow and other chipped points. The most common tradition concerning this type of work holds that the chip was removed by heating the stone and then applying water, or some other cooling agent.

Some stories state that the stone was heated in the coals, and the water applied with a small wooden stick, or brush. Other accounts state that the moisture was applied from the mouth by means of a milkweed string which was allowed to come in contact with the heated stone. Other variations of this account are too numerous to mention, but they all depend upon the supposed reaction of heating and sudden cooling. It is probable that such a chipped point has never been manufactured since the beginning of time, but no amount of reasoning or scientific research or definite statements by Indians seems to be sufficient to put an end to such stories.

The most common method of chipped point manufacture depended upon the breaking from a large piece of stone of a suitable flake. This flake was thrown off from the stone by means of a heavy blow. The hammer generally used was a heavy piece of bone, often the shin bone of a deer or elk, the blow being struck with the end of the bone.

By some manufacturers the large fragment of stone was held against a lump of stiff clay and the flake thrown off between the clay and the stone. It is explained that this kept the blow from fracturing the flake itself. If the flake was quite large and a large spear point or knife was to be made from it, it was placed against the same lump of clay and further reduced by blows. These chips were removed with the bone hammer in

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

324 the same way that the first flake was obtained. In this manner the flake was roughly reduced to shape.

The remainder of the chipping was done by pressure and not by blows. The method by which this was done probably varied, but the principle was always the same. It is stated by one authority that the Indian squatted with his knees on either side of an up-right stake which had been driven securely into the ground. The work was rested on the top of this stake. The [412] implement used in pressing off the small flake was generally the tip of a buck horn.

The selection of materials like bone and horn for the work of chipping brittle stones, or obsidian, which is really a volcanic glass, shows thorough understanding of the nature of the material. The horn or bone is hard enough not to be broken in removing the chips, but at the same time is yielding enough that the edges of the chips cut into it and are not shattered, as would be the case with a steel or stone implement.

The flake which was being reduced by shaping was held in the left hand between the tips of the fingers and the base of the thumb with the edge toward the worker, the hand being protected by a piece of buckskin. The buck horn was held in the right hand. It was sometimes lashed to a stick, which extended up as far as the elbow and was held between the upper and lower arms, with the elbow bent almost double.

The side of the flake was placed upon the edge of the top of the stake, which extended several inches above the knees of the worker. The buck horn was placed across the opposite edge of the stake with the tip resting upon the edge of the flake where the chip was to be removed. The point where these two met was elevated approximately one half inch above the top of the stake.

By bearing down strongly on both buck horn and flake so that they could not slip on the stake and then raising their outer ends gradually, the worker could secure tremendous leverage, and bring great pressure to bear upon the edge of the flake. As the flake cut into the buck horn, and as both were lowered toward the top of the stake, the pressure became so great that a chip was thrown off the flake. By varying the direction of the pressure exerted against the flake, the direction of the fracture could be controlled. The fracture was almost directly in the line of pressure.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

CHAPTER IX

BASKETRY

YOKUTS STITCHED BASKETRY

The Yokuts tribes will probably be noted throughout all time for the wonderful basketry which they manufactured. There were several types of this basketry, as well as a number of forms. These baskets, mortars, steatite vessels, round wooden boxes, dried animal bladders and crude bags were the only containers known to these Indians. 285

Practically all of the Yokuts baskets were of coiled construction. They were not woven, but were stitched together. This process was much slower and more difficult than that of weaving, but produced a basket as strong as though it were made of sheet metal. Many Yokuts baskets were used for cooking and, when completely dry, would become water-tight twenty or thirty minutes after they were placed in water.

The filler, or coiled material, was obtained from a tall grass which grew in clumps along the valley streams and sloughs. To pioneer white cattlemen of the Joaquin this was known as bunch-grass (Epicampes Rigens). It had no joints, being perfectly smooth from one end to the other, and attained a length of more than four feet. The Indians called this material *chaw'-kish*. 285 824

The white, or light, straw colored material with which the stitching was done, came from the root of a swamp grass (Cladium Mariscus), which was at one time quite common throughout the entire overflow area of the valley

Cladium roots attain a diameter of about three sixteenths of an inch and a length of three or more feet. Yokuts women still dig it from the ground by means of pointed sticks. The bark is removed from it and it is split into two, three, or four parts. [412]

The splitting of this material requires great care and much practice. One piece is held between the teeth, the other two between each thumb and the next two fingers. By equalizing the pressure between the two hands and the teeth the root is split into three equal parts. In this way Yokuts women can split a root four feet long into three parts so even in size that the dif- 285

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

The material used in stitching to produce the red portion of the designs is prepared from redbud (Cercis Occidentalis). This is the beautiful shrub of the Sierra which is covered with magenta colored blossoms during the months of March and April. The outer wood is stripped from the slender shoots of redbud. These strips are a permanent red on the outside. Their color greatly resembles manzanita bark. The Yokuts name for this material is *ah'-nup*.

Some basketry designs make use of black stitching material. This is the root of the bracken fern (Pteridium Aquilinum) and is the only basketry material which is artificially colored by the Yokuts. It was necessary for the valley Yokuts tribes to secure this root by trade. The root of the fern was stripped into thin pieces. Some reports state that the pieces were then buried in the dark mud of a spring for several weeks. In discussing the coloring of the fern roots with the Wukchumne I found that they used a different method. They boiled the root in a quantity of black mud from the sloughs, or tule swamps. This produced a dead black, which is quite permanent.

I have collected pieces of ancient burial baskets which had been exposed to light for at least seventy years, to find the red and black of the designs almost as bright as those of recent work. The Yokuts call the black stitching material *muh-no'-kits*.

The awl used in stitching was made from the shin bone of a deer. One bone was split and two awls made from it. When completed they were from seven to nine inches long. From time to time the tip of the awl was broken. A new point was formed by whetting the bone on a piece of sandstone. When the length of the awl was reduced to about three inches it was discarded. The Yokuts call this awl *bah'-oak*.

YOKUTS WICKER AND TWINED BASKETS

In addition to the *ahketse* (ah-keet'-se), or baby cradle, the Yokuts tribes made several receptacles of wicker construction. The material used was either young black willow or cottonwood shoots. The *Wukchumne* say that young cottonwood shoots are better than willow, that they do not become so brittle with age.

The most common wicker-work utensil is a sort of colander, or sieve. This is used in sifting the chaff of the dried salt grass after it has been flailed, and in separating trash and

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

285 415 leaves from many food stuffs. The Wukchumne call this sieve *tah'-meuk*. The tahmeuk is also used to drain many foodstuffs in much the same way that the modern colander is used. I have seen Yokuts women washing mustard greens and fungus growths in the tahmeuk. The common shape of this interesting utensil is elliptical. It varies greatly in size. Some are as long as two feet and some less than eighteen inches. They are from ten to sixteen inches across the middle and from four to six inches in depth.

285 When ready for use the cottonwood shoots used are about one eighth inch in diameter. They are spaced from one sixteenth to one eighth of an inch apart. Near the ends of the tahmeuk the shoots are drawn closely together. About the edge of the whole is lashed a rim composed of a cottonwood wythe about three-eighths of an inch in diameter. The ends are moistened and then pounded with a stone. They are doubled under the rim and lashed in place with *hupud* (hoo'-pud).

The small shoots are twined together with hupud at intervals of about one inch. This construction produces an extremely light, but durable utensil. The tahmeuk is still used extensively among the remaining Yokuts.

285 412 A seed beater which greatly resembles the tahmeuk is also widely used. It differs most in that it is fitted with a handle at one end. The handle is formed by lashing together the projecting cottonwood shoots, instead of bending them under, as is done in making the tahmeuk. This utensil is called *yah-mah'-he tah'-meuk*. It is used to beat the seeds of dry grasses [222] and shrubs into a basket. In this way one *moke* (mo'-ke), or Indian woman, can gather several hundred pounds of seeds in a day.

285 At least two types of baskets are made by twining, instead of stitching. The most interesting of these is a practical receptacle for use in gathering blackberries. This basket is pear shaped, about five inches across the mouth, six inches across the largest portion near the bottom and eight to nine inches in depth. It is fitted with a buckskin handle which is long enough to pass over the head, allowing the basket to be suspended from the neck and to hang slightly above the waist.

[222 481] This arrangement leaves both hands free for gathering blackberries and speeds up the work considerably. The Indian woman can crawl through the blackberry vines, draw them

[Text continues on p. 160]

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

in excellence of stitching, but in mathematical regularity of detail.

In addition to those designs which are worked into the basket itself, it is often embellished with the feather top-knots of quail. This was particularly true of the bottle-neck, or *aw'-suh*, of the Yokuts of Kaweah, Tule and Kern Rivers. In addition, various kinds of beads were sometimes fastened to the outside of the baskets.

It must be appreciated by readers that in an article of this nature, which has already exceeded proper limits, the subject of basketry designs can scarcely be approached. In addition to the forms already discussed there are countless numbers of designs reproducing almost every possible geometrical form. Some of them, we are told by basket makers, are used simply because they are *pah-yo'-me* (pretty).

It is of interest to note here that at least some of the basketry designs were used on the fabric made by the southern Yokuts. These tribes, the Tulamni, Tuhohi, Hometwoli and Yowlumne made many large circular mats or bags of fabric which probably were used for many purposes about their camps. However, the only uses of which we have definite knowledge are two, as shrouds for dead bodies and as linings for the sand basins in which acorn flour was leached. These fabric mats or bags were started of fiber thread much as were the blackberry gathering baskets and were twined, not woven. One piece of such fabric shows the rattlesnake pattern, worked in black thread. Although all existing specimens of Yokuts fabric have come from graves and are partially decayed, several designs can be distinguished on them. Material used in making Yokuts fabric is thought to be the fiber of the native hemp and/or milkweed.

How the native woman was able, without pattern or example in nature, to bring into being countless numbers of beautiful designs and, with no tools other than a bone awl and a sharp rock, to form them into a basket, can never be comprehended by the layman until he has watched that work for many weeks. The artistic taste and mathematics involved in this one Indian art alone shows more plainly than anything else we know about them that the mind of the Yokuts Indian was equal to many many things far beyond anything that we have appreciated.

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

285 517 It is a statement of bare fact to record that the baskets made by the Yokuts Indian women are the very finest known to have been made by machine or by hand by any people of any race in the history of the world. The Pomo Indians of Lake [171] County made a basket covered with colored feathers, and probably made more kinds of baskets, but they were no finer in workmanship than those made by the Yokuts on Kings, Kaweah, Tule and Kern Rivers, and probably, in prewhite days, throughout the San Joaquin. Not only are the stitches in some baskets as fine as sixty to the inch, but color combination, texture, shape and design are completely fascinating and present some of the finest conventionalized designs known to the art world.

285 531 A Yokuts Indian woman of primeval days, seated on a deerskin or tule mat under a spreading valley oak, would have been as little expected to turn out a beautiful work of art as any known primitive person. One is both privileged and amazed who has seen them at work amongst the litter of an Indian camp. Their persons and clothing were often ragged and soiled, their homes and furniture were of the most meager, primitive kind. There was little in the immediate surroundings to suggest anything used in designing a Yokuts basket.

But the Yokuts woman saw far beyond her camp. Without a drawing or pattern of any kind she placed upon her basket the most pleasing and delightful representations of mountains, birds, butterflies, deer, quail, streams, lightning and the heroes of her tribal myths and stories. This was all done, remember, [412] with a crude chipped-stone knife and a bone awl, not another tool of any kind.

Beginning at the bottom of a curved, flaring basket, the Yokuts woman placed the first colored stitches of a design, complicated and involved beyond the imagination and memory of most white persons. She carried this design through to completion without a pattern or drawing.

One must also appreciate that for pictorial purposes stitched basketry has the limitations of the mosaic, the cross-stitch, or the loop used in hooking rugs. It was not possible to reproduce most objects in their true shape and form. They were conventionalized. A triangle could represent a deer's track, an arrow point, or a flame. A realistic reproduction of a quail topknot stood for quail: the shape that the inch-worm assumed in traveling represented it. Butterfly was sometimes represented by a wavy line suggestive of its flight. Four small

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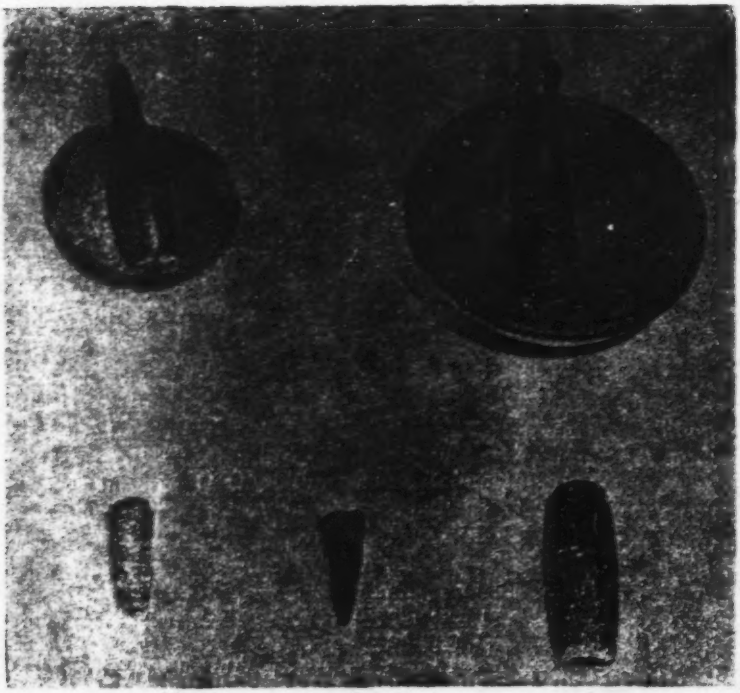

Top left is a steatite bowl, five inches in diameter, and pestle used for many generations by the Yowlumne tribe of Yokuts for preparing the tea used in their Jimson-weed Initiation Ceremony. Top right is a fine sandstone Jimson-weed Ceremonial bowl and pestle used for many years in Tejon Canyon by Comalino Indians who had migrated from near Carpinteria. Below, left, is a steatite tobacco pipe from the site of Alpaugh in Tulare Lake; center, a clay tobacco pipe from the Broder mound six miles east of Visalia; right, a steatite medicine tube from the Sweet mound near Waukena.

abstinence. By this time the young men were weak from fasting and in such a mental state as to be easily impressed and influenced,

The Jimson weed was prepared by an old man of the tribe by pounding the roots in a special mortar preserved for that purpose. From the pulp thus prepared was brewed a strong tea. When this preparation was completed the tea was taken to the young men who had been living during their week of fasting in the sweathouse. There they listened to a long discourse by the

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

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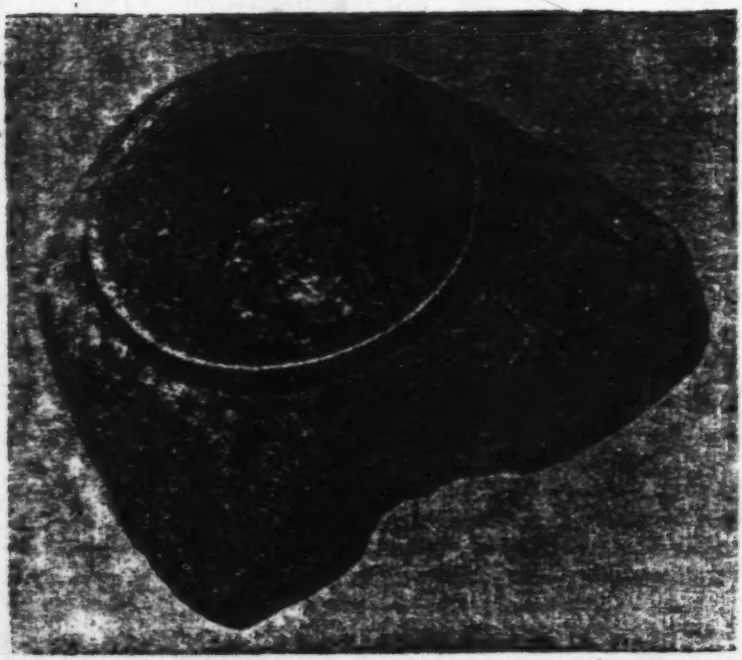

A Wukchumne Yokuts wooden mortar with basket hopper.

159 The valley acorns would not keep very well. We could not
251 store them in granaries like we did the mountain acorns. We had to take off the hulls as soon as we gathered them. Then we drilled holes in them and put them on strings. We hung the strings of acorns in the house. We thought that it was the smoke that kept the worms from eating them.

159 My people used some rock mortars to pound seeds in, but
412 they used lots of wooden mortars, too. My mother had a big wooden mortar when I was a little girl.

When an oak tree would fall down the Chunut women would take the bark off of the trunk and make mortars in the top of it. They used coals to burn holes in it. I remember lots of trees with three or four mortars in them. The women would sit on the tree trunk and pound acorns and seeds.

159 In the long tule house each family had its own door. You
342 could not go through the next place unless you knew it was all
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5: Gayton E-5 (1925-1927) 1929
NS29 Yokuts NS29
Western Mono NS25

In the present instance the clay was obtained from a depression in an oak-covered meadow, which was saturated by seepage and which drained the near-by area. A digging stick was used to open up the ground and loosen it sufficiently for the potter to lift or pull out handfuls of the soil. She worked at a little ledge which permitted her to get at the earth some eighteen inches below the surface. At this level the soil carried a heavy admixture of sand. Proceeding downward the amount of sand grew less, and the potter began testing the viscosity of the soil by squeezing a lump in her hand. Finally, about two feet below the surface, she reached a pure clay with a slight admixture of sand which proved to be of satisfactory quality. The sand that came with the clay acted as tempering material. All informants agreed that binding material was rarely added: it was usually a matter of getting clay without too much sand and removing bits of rock, as in the present case. Occasionally sand was added, but no other tempering material was known.

The potter took out as much clay as she could carry. The amount manufactured six pots and two pipes (pl. 102), and a seventh small pot. In former times the clay was wrapped in an old deer skin and carried home in a carrying net.

Preparation of all clay consisted of kneading and pounding the material. This was done on a broad, flat portion of a bedrock mortar. Clay was never put in mortar holes in which food substances were ground. Before starting the potter selected a short, broad, roughly rectangular pestle for pounding the clay. (Other pestles, and the openings of food mortars, appear in the background of pl. 95*a*; the typical triangular food pestle is seen just beyond the basket in pl. 95*b*). Half the entire quantity of clay was put on the rock and pressed with the hands into a solid lump. The potter sat cross-legged before it, and picking it up and lifting it to shoulder level, beat it down upon the rock. This she continued for about ten minutes, turning the lump in her hands as she worked. The process solidified the mass of clay. The pestle was then taken up and pounded into the clay. This stage of the clay-working is shown in plate 95*a*. The flattened mass of material was continually turned inward at the edges. About ten minutes of pounding brought the clay into a highly viscous condition, so that the heavy substance adhered to the pestle and partly lifted off the mortar rock at the beginning of each upward stroke. The potter occasionally tested the condition of the clay by rolling out between her hands a rope of clay such as the vessels are built from (pl. 95*a*).

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sensation cues on which judgment of the size and smoothness of the roll is based, seem to come largely from the heavy cushions below the base of the fingers. When the rope of clay emerges and is visible below the hands it is too late to rectify irregularities in its shape.

The first roll of clay was set inside the rim and pinched to it; all subsequent coils rested on the edge of the preceding one. When setting a new coil the potter held one end of the roll in her left hand and pinched it on with that hand while the loose portion rested across her right hand as shown in plate 96*a*. The roll was pinched into a thick, flat-sided ribbon as it was being put in place. While the coil was being added the potter occasionally turned the basket in contra-clockwise direction in order to keep the portion of the pot on which she was working in a convenient position before her. When the coil was in place and the ends welded together the potter dipped her fingers in water and pressed and smoothed out the junction between the new coil and the one on which it rested.

After the sides of the pot were built up about two inches the potter stopped to smooth off more completely its inner and outer surfaces (pl. 96*b*). For this she used a small chip of wood picked up from the ground, or sometimes a section of a large acorn husk. By this time the clay in the pot was sufficiently firm to allow it to be picked up and handled. Slight incrustations and bumps were dampened and scraped down with the chip or rubbed with the fingers. Generally, the scraping and smoothing movements were vertical. The surfaces were gone over in this manner after every two or three inches of coil-building until the pot was completely formed.

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When the pot was entirely formed the potter went over the surface with a small polishing stone[2] of steatite (pl. 97*a*). This served two purposes. First, it rubbed out minor irregularities in the surfaces, for though the vessel was firm enough to be handled the clay could be scraped off slightly. But as the pot dried rapidly its surface soon became harder than that of the polishing stone so that the steatite rubbed off in a fine white powder. Secondly, this powder settled into the clay and produced a hard surface which in turn became more effective in rubbing off more dust from the stone. The potter occasionally rubbed the steatite stone on the flat side of a granite pestle and the resulting dust she applied to the pot with her fingers. In this final polishing process the strokes were horizontal or oblique. They

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[2] University of California museum specimen 1-27004. There are two similar stones in the Barrett collection, mus. acc. 1-10876, 1-10943.

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cooking. Even with this comparatively short firing they give forth a metallic sound when struck with the knuckles. The potter said they would "ring like a bell" if fired the customary length of time.

When the firing was finished the pots were removed from the embers with a pair of long sticks. The pots are often red hot, and are again set along the edge of the fire pit so that the cooling will be gradual.

Among the Wobonuch and Waksachi Western Mono and Entimbich Yokuts this completed the work and the pots were ready for use. The Patwisha (Balwisha) Western Mono, Wükehumni, and perhaps other neighboring Yokuts groups finished the vessels with a coating of thin acorn mush. Sufficiently fired pots were removed from the fire while at high heat and were immediately painted inside and out with acorn mush applied with a soaproot brush. The mush "sizzled and baked right into the pot." Three or four coatings were given. This process was said to prevent the clay from soaking up liquids, "sweating," and breaking. A similar coating is applied to cooking baskets to make them watertight. The Wükehumni Yokuts called this "doctoring" the pot.[6]

The Patwisha and Wükehumni procedure in pottery-making differed in two other points from that of the Kings River tribes. The first was in the preparation of the clay. It was not used directly after being taken from the ground, but was dried in the sun or near a fire. When thoroughly dried it was put in a large mortar hole (one no longer used for food-grinding) and pulverized with a pestle. The resulting dust was sifted through a twined basket, such as an old seed-beater, and returned to the mortar hole.[7] A small amount of water was poured over the ground clay, and all stirred about to make a heavy paste. If the clay seemed too smooth a little sand was added at this time. The mixture was lifted out onto the surface rock, and pounding and kneading proceeded as above.

The second point of difference was in marking the pot to insure safe firing. Vertical lines were drawn on the outside of the pot, not with the soapstone polisher as among the Wobonuch, but with the

[6] Toi'in na ki'wic nim hi'am si'ei, doctoring I pot my now done.

[7] Kroeber, Handbook, pl. 50*d*, illustrates a beater of this type. Opened-twined baskets, made for sifting pulverized materials such as manzanita berry flour, etc., were used in this case. When the Wobonuch made pottery from dried clay, which was only in summer or fall, the finely ground clay was extricated by winnowing, according to Dr. T. T. Waterman, whose photograph of the process is shown in pl. 97*b*.

7:Powers J-5 (1871-1876) 1877 NS29 Yokuts NS29

226 long, in which they cruise timidly about near the shore. There is a margin where the bottom is almost level and the waves run light; but the middle of the lake is of immense depth, and the billows sometimes lash themselves into oceanic proportions.

172 412 Around the lake and on King's River one will often find a family using a tolerably well-made stone mortar. They always admit that they did not manufacture these implements, but happened on them in digging or found them on the surface, and that they belonged to a race other than their own. They sometimes have the ingenuity to improve on them by fastening a basket-hopper around the top to prevent the acorns from flying out. On the west side of Tulare Lake these mortars are very numerous, and of course they must have been carried thither from the mountains.

285 On Tule River I saw the process of basket-weaving. Instead of willow twigs for the framework or warp, the squaw takes long stalks of grass, (*Sporobolus*); and for the threads or the woof various barks or roots split fine—pine root for a white color, willow bark for a brown, and some unknown bark for a black. The process of weaving is like that heretofore described; [237] the awl or needle was the sharpened thigh-bone of a hawk.

525 The Gualala style of gambling prevails all over the State, but the Yokuts have another sort, which pertains exclusively to the women. It is a kind of dice-throwing, and is called *u-chu'-us*. For a dice they take half of a large acorn or walnut shell, fill it level with pitch and pounded charcoal, and inlay it with bits of bright-colored abalone shells. For a dice-table they weave a very large, fine basket-tray, almost flat, and ornamented with devices woven in black or brown, mostly rude imitations of trees and geometrical figures. Four squaws sit around it to play, and a fifth keeps tally with fifteen sticks. There are eight dice, and they scoop them up in their hands and dash them into the basket, counting one when two or five flat surfaces turn up.

525 777 The rapidity with which the game goes forward is wonderful, and the players seem totally oblivious to all things in the world beside. After each throw that a player makes she exclaims *yet'-ni* (equivalent to "one-y"), or *wi-a-tak*, or *ko-mai-éh*, which are simply a kind of sing-song or chanting One old squaw, with scarcely a tooth in her head, one eye gone, her face